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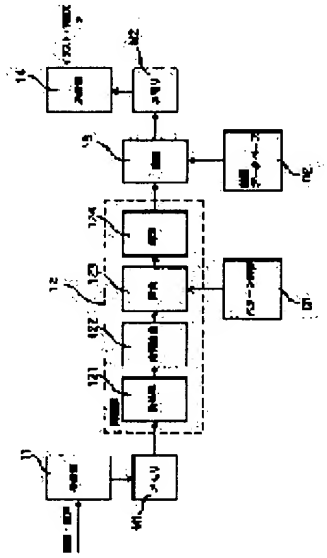
(54) MOBILE PICTURE BOOK

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a device for telling a name or the like on that site when the image or sound of an interesting object found out outdoors or the like is transmitted by utilizing the high speed data communication function of the next generation portable telephone.
SOLUTION: A picture book server has a configuration shown in the figure, a receiving part 11 receives the image and sound of a digital signal sent from a portable telephone 6 of a user and respectively stores them on a receiving memory M1. A recognition part 12 analyzes the input image and the input sound stored on the receiving memory M1 and determines a category to which the sent image or sound belongs. With the identified category as a key, a picture book dictionary D2 is retrieved by a retrieval part 13, and relevant picture book information is read out and written on a transmitting memory M2 after adding a name or explanatory sentences together with an illustration. A transmitting part 14 transmits the picture book information written on the transmitting memory M2 to the portable telephone 6 of an inquiry source.



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* NOTICES *

CLAIMS

[Claim(s)]
[Claim 1] A receiving means to receive the image which photoed the inquiry object which installed the server which distributes pictorial book information, such as animals and plants, in the center, and was sent to this server from the cellular phone, A discernment means to analyze the received image and to identify an inquiry object, and a retrieval means to search a pictorial book dictionary based on the discernment result of an inquiry object, The mobile pictorial book which equips with and carries out the deer of a transmitting means to transmit the retrieval result of a pictorial book dictionary to the cellular phone of inquiry origin, and comes to display the pictorial book information on an inquiry object on the display of said cellular phone.
[Claim 2] It is the mobile pictorial book according to claim 1 which comes to identify to a key the genre specified when identifying the image of said inquiry object, and transmitting an image.
[Claim 3] It is the mobile pictorial book according to claim 1 which comes to identify to a key the area which transmitted the image when identifying the image of said inquiry object.
[Claim 4] It is the mobile pictorial book according to claim 1 which comes to identify to a key the season which transmitted the image when identifying the image of said inquiry object.
[Claim 5] It is the mobile pictorial book according to claim 1 which comes to output two or more candidates as a discernment result when identifying the image of said inquiry object.
[Claim 6] It is the mobile pictorial book according to claim 1 which comes to display the image of an inquiry object with a description sentence when displaying the pictorial book information on an inquiry object on the display of said cellular phone.
[Claim 7] The mobile pictorial book according to claim 1 to 6 which comes it possible to carry out an inquiry with the voice which the inquiry object other than the image of said inquiry object utters.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the mobile pictorial book which displays a description sentence and an image on a display on that spot, and teaches the identifier and the description of an inquiry object, when the image of a flower, the cry of a bird, etc. are transmitted from a cellular phone.
[0002]
[Problem(s) to be Solved by the Invention] If you go out for a hike etc., and an unknown flower is found or the cry of a bird is heard, I want to know the identifier etc. When such, it is convenient if there is equipment which does not investigate a pictorial book by Ushiro to reliance, but investigates ambiguous storage on that spot, and teaches an identifier etc. Such equipment is useful while those who greet a future aging society and take a walk Noyama as a hobby after retirement increase in number.
[0003] On the other hand, in the next-generation cellular phone which realizes high-speed data transmission, the TV phone which can do the talk becomes possible, looking at the face of each other in real time in the pictures using the cellular phone which attached the video camera. Moreover, an image can be transmitted now and received freely, such as transmitting the image photoed with the video camera to a partner's cellular phone.
[0004] Then, transmission of the image and voice of an object with the interest found out in the fields etc. using the high-speed-data communication facility of a next-generation cellular phone makes this invention for the purpose of offering the equipment which teaches an identifier etc. on that spot.
[0005]
[Means for Solving the Problem] In order to attain this purpose, this invention was constituted as follows.
[0006] Namely, a receiving means to receive the image which photoed the inquiry object which invention of claim 1 installed the server which distributes pictorial book information, such as animals and plants, in the center, and was sent to this server from the cellular phone, A discernment means to analyze the received image and to identify an inquiry object, and a retrieval means to search a pictorial book dictionary based on the discernment result of an inquiry object, It is the mobile pictorial book which equips with and carries out the deer of a transmitting means to transmit the retrieval result of a pictorial book dictionary to the cellular phone of inquiry origin, and comes to display the pictorial book information on an inquiry object on the display of said cellular phone. Invention of claim 2 is a mobile pictorial book according to claim 1 which comes to identify to a key the genre specified when transmitting an image, when identifying the image of said inquiry object. Invention of claim 3 is a mobile pictorial book according to claim 1 which comes to identify to a key the area which transmitted the image, when identifying the image of said inquiry object. Invention of claim 4 is a mobile pictorial book according to claim 1 which comes to identify to a key the season which transmitted the image, when identifying the image of said inquiry object. Invention of claim 5 is a mobile pictorial book according to claim 1 which comes to output two or more candidates as a discernment result, when identifying the image of said inquiry object. Invention of claim 6 is a mobile pictorial book according to claim 1 which comes to display the image of an inquiry object with a description sentence, when displaying the pictorial book information on an inquiry object on the display of said cellular phone. Invention of claim 7 is a mobile pictorial book according to claim 1 to 6 which comes it possible to carry out an inquiry with the voice which the inquiry object other than the image of said inquiry object utters.
[0007]
[Embodiment of the Invention] With reference to a drawing, the gestalt of operation of this invention is explained below.
[0008] The system configuration Fig. of the mobile pictorial book which carried out this invention to drawing 1 is shown. A mobile pictorial book connects to the cellular-phone network 4 the pictorial book server 1 installed in the center through a router 2 and the gateway 3, and makes wireless connection of a user's cellular phone 6 through a base station 5 at the cellular-phone network 4. A cellular phone 6 makes possible the TV phone used as the main shaft of a next-generation cellular phone, and what attaches a video camera, and can transmit and receive image contents, such as an animation and a still picture, on real time is used for it. Or a digital camera is connected through a cable and what can transmit and receive the image photoed with the digital camera at high speed is used. Or pocket information communication terminals, such as PDA, may be used without limiting to a cellular phone 6.
[0009] The block diagram of the pictorial book server which carried out this invention to drawing 2 is shown. Among drawing, 11 are a receive section, receive the image and voice of a digital signal which have been sent from a user's cellular phone 6, and store them in the receiving memory M1, respectively. 12 is the recognition section and the image which analyzed the input image and input voice which were stored in the receiving memory M1, and has been sent, and voice determine to which category it belongs. 121 is the pretreatment section, and in the case of an image, only an object is cut down, it moves and rotates it, reduces it, it responds and expands it to the need, and normalizes an image. Moreover, noise rejection, strain amendment, contrast amendment, filtering, edge enhancement, etc. are processed. In the case of voice, a voice part is started out of a background noise by extracting the parameter corresponding to the energy of the inputted sound signal, investigating change of the parameter, and detecting the start edge and termination.
[0010] 122 is the feature-extraction section and extracts the parameter showing the description of an image or voice from an input signal

In the case of an image, the description of an object is extracted by technique, such as the profile of thinning and a body image, detection of an edge, a RA ** ring, binary-izing, image measurement, and gradation analysis. In the case of voice, the spectrum description of a sound signal is extracted by the technique of audio spectrum analysis, such as flame analysis and linear predictive coding.

[0011] 123 is the collating section and performs collating with the image accumulated in the pattern dictionary D1 using the extracted feature parameter, or an audio standard pattern. The pattern dictionary D1 contains standard patterns, such as an image of a flower, and a cry of a bird, according to a genre, adds indexes, such as a location, a season, etc. when they live further, and enables retrieval a genre exception, a location exception, and according to season. While this speeds up [retrieval] at the time of collating, the collating range is narrowed and the collating error by matching with an unrelated standard pattern is prevented. Genre assignment at the time of retrieval is performed by choosing the menu displayed on the display of a cellular phone 6. Moreover, assignment of a location and a season is automatically performed using the positional information service function and submission time using GPS of a cellular phone 6.

[0012] 124 is the discernment section and it judges whether an input image and input voice correspond, for example to the image of which flower, or it corresponds to the cry of which bird. The decision approach calculates similarity or distance between the descriptions of the strange pattern inputted as the standard pattern, and makes a recognition result the category of the high number scientific principle theory standard pattern of whenever [coincidence] stochastic most. The recognition result at this time is not limited to one category, but selects some similar categories as a candidate.

[0013] It is the retrieval section, and 13 searches the pictorial book dictionary D2 for the identified category to a key, reads the pictorial book information on relevance, with an illustration, it adds a name and a description sentence and writes them in the transmitting memory M2. When there are two or more identified categories, each pictorial book information is read according to an individual, and it writes in the transmitting memory M2.

[0014] 14 is the transmitting section and transmits the pictorial book information written in the transmitting memory M2 to the cellular phone 6 of inquiry origin. When there is two or more pictorial book information which should be transmitted, it reads from the transmitting memory M2, respectively, and transmits serially. Two or more received pictorial book information can be displayed on a display in order, pushing the scroll button of a cellular phone 6.

[0015] With the above configurations, the mobile pictorial book which carried out this invention records the image and voice of an inquiry object on the memory of a cellular phone 6, then pushes a menu button, and chooses the genre of an inquiry object. And next an initiation carbon button is pushed and the image and voice of an inquiry object are transmitted to the pictorial book server 1. At this time, the area and season of an inquiry object are specified based on the positional information and submission time of a cellular phone 6.

[0016] And the pictorial book server 1 extracts the feature parameter of the image and voice which received, collates with the standard pattern the genre exception accumulated in the pattern dictionary D1 using this, a local exception, and according to season and makes a recognition result most the category of a high standard pattern of whenever [coincidence], the pictorial book dictionary D2 is searched for this category to a key, and it transmits a retrieval result to the cellular phone 6 of inquiry origin. Thereby, an identifier and a description sentence are displayed on the display of a cellular phone 6 with the image of an inquiry object.

[0017]

[Effect of the Invention] As explained above, the mobile pictorial book of this invention analyzes the image sent from the cellular phone, identifies an inquiry object, searches a pictorial book dictionary, and displays the pictorial book information on an inquiry object on the display of a cellular phone. Therefore, according to this invention, even if it does not walk around with pictorial books, such as heavy animals and plants, the identifier of the strange flower found out in the fields etc. can be known on that spot. For this reason, it is convenient for a field lesson of a school, wild plant admiration of a hobby, etc. Moreover, since a pictorial book dictionary can be searched only with sending an image, even if it does not turn over a huge number of pages, the pictorial book information on target can be acquired easily.

[0018] Moreover, the mobile pictorial book of this invention identifies an image for the genre and area which were specified, a season, etc. to a key. Therefore, since the object range is narrowed and identified, while discernment processing becomes quick according to this invention, discernment precision improves.

[0019] Moreover, the mobile pictorial book of this invention outputs two or more candidates as a discernment result. Therefore, since according to this invention human being judges out of two or more candidates and a right thing is chosen, the ambiguous part of image recognition can be complemented.

[0020] Moreover, the mobile pictorial book of this invention displays the image of an inquiry object on the display of a cellular phone with a description sentence. Therefore, according to this invention, since the image and thing can be compared, it can check whether to be sure, the description sentence displayed on the display is the thing of an inquiry object. [of a discernment result]

[0021] Moreover, the mobile pictorial book of this invention makes possible an inquiry with the voice which an inquiry object utters. Therefore, since a pictorial book dictionary can be searched only with sending cries, such as a bird, according to this invention, pictorial book information, such as a difficult bird of photography, can be acquired easily.

[Translation done.]

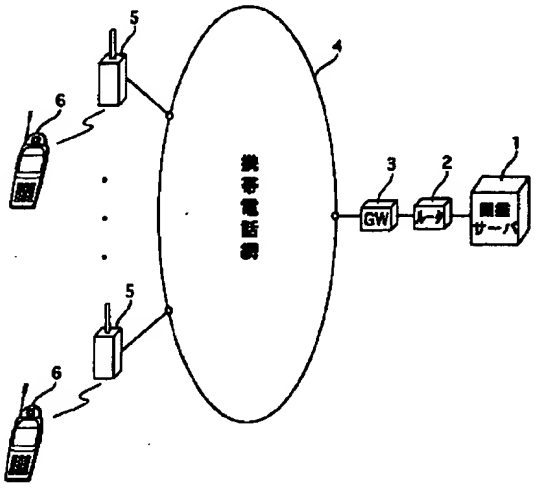
DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the system configuration Fig. of the mobile pictorial book which carried out this invention.
[Drawing 2] It is the block diagram of the pictorial book server which carried out this invention.
[Description of Notations]
1 Pictorial Book Server
11 Receive Section
12 Recognition Section
121 Pretreatment Section
122 Feature-Extraction Section
123 Collating Section
124 Discernment Section
13 Retrieval Section
14 Transmitting Section
2 Router
3 Gateway
4 Cellular-Phone Network
5 Base Station
6 Cellular Phone
D1 Pattern dictionary
D2 Pictorial book dictionary
M1 Receiving memory
M2 Transmitting memory

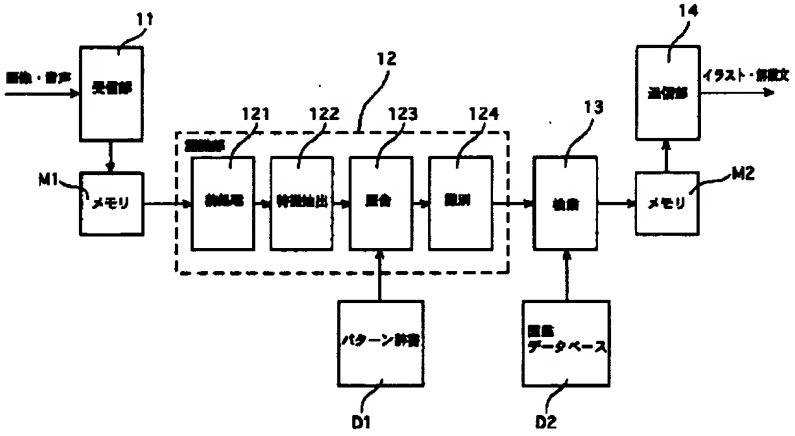
[Translation done.]

DRAWINGS

[Drawing 1]



[Drawing 2]



[Translation done.]